DOCUMENT RESUME

ED 073 862 RC 006 803

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TITLE	The Equality of Educational Opportunity within Ethnically Mixed Classrooms.
INSTITUTION	Commission on Civil Rights, Washington, D.C.
PUB DATE	1 Mar 73
NOTE	26p.; Paper prepared for American Educational Research Association meetings, New Orleans, Louisiana, March 1, 1973
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	Academic Achievement; Anglo Americans; *Classroom Integration; *Educational Equality; Educational Opportunities; Ethnic Groups; Grade 4; Grade 8; Grade 10; Grade 12; *Interaction Process Analysis; *Mexican Americans; *Teacher Influence
IDENTIFIERS	*Flanders System of Interaction Analysis

ABSTRACT

Teacher-pupil interactions among students of different ethnic groups, with particular focus on possible disparities between Mexican Americans and Anglos, were compared. Data were also collected on Blacks and other ethnic group students, but the number of these students proved inadequate for statistical analysis. Classroom observations in rural, urban, and suburban schools in California, New Mexico, and Texas enrolling substantial numbers of Mexican American students were used. Data from 429 English language arts classrooms in grades 4, 8, 10, and 12 were analyzed using the Flanders Interaction Analysis system to code teacher-pupil interactions; and 22 school, classroom, and teacher characteristics were investigated. The system was modified in order to code the predominant classroom behavior with reference to the most appropriate Flanders category and to the identity of the student involved. The coding of raw data was modified to allow for sensitive analysis of possible disparities among students of different ethnic groups. The coding was done by 5 observers who spent 45 minutes in the 4th grade classes and the entire period in the other classes. Findings indicated significant differences between Mexican American and Anglo students in terms of teacher praise or encouragement, teacher acceptance, teacher questioning, teacher's positive feedback, all non-criticizing teacher talk, and all student speaking. (NQ)

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ED 073862

THE EQUALITY OF EDUCATIONAL OPPORTUNITY WITHIN ETHNICALLY MIXED CLASSROOMS

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For Presentation at the
AERA Annual Meeting
March 1, 1973
New Orleans, Louisiana

Introduction

In 1969, the U.S. Commission on Civil Rights initiated a comprehensive study of the educational opportunities afforded to Mexican Americans in the Southwest United States. 1/ Questionnaires were sent to 538 districts and 1,166 schools in five states of the Southwest asking for information about 1) conditions in the schools attended by Chicanos, 2) educational practices used in these schools, and 3) educational achievement of their students. 2/ In addition, the Commission staff did more intensive, on-site studies of 52 schools in three of the states. These studies were designed to investigate the dynamics of what actually happens

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1/ In this paper, the term Mexican American refers to persons who were born in Mexico and now reside in the United States or whose parents or more remote ancestors immigrated to the United States from Mexico. It also refers to persons who trace their lineage to Hispanic or Indo-Hispanic forebears who resided within Spanish or Mexican territory that is now part of the Southwestern United States. The term Chicano will be used interchangeably with the term Mexican American. The term Anglo is widely used in the southwest to refer to white persons who are not Mexican American or members of other Spanish surname groups.

2/ The states were Arizona, California, Colorado, New Mexico, and Texas. It is estimated that these states encompass approximately 85 percent of the more than 5.2 million Chicanos residing in this country. See Current Population Reports, Series P-20, No. 238, July 1972, Table 1.

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in the daily operations of the schools. The research reported in this paper is based on data collected from systematic observation of 494 classrooms in these schools. 3/

Civil rights activities have long put heavy emphasis on achieving equal opportunity in education. Frequent studies of educational opportunity have repeatedly shown that in many school districts, minority group children attend school in older, less well maintained facilities, and have less equipment, older materials, and less educated and experienced teachers. 4/ The quality of schooling depends somewhat upon the quality of the school buildings, equipment, books, and teacher preparation, because they provide the setting for learning. However, the quality of educational opportunity is most importantly affected by what happens in the school setting. The instruction, guidance, and encouragement provided to the students are of essential importance to the quality of educational opportunity. They are provided through the teacher's actions and reactions to the whole class and to the individual members of the class. A teacher who is a poor instructor, or short tempered and autocratic, or simply uncaring, does not provide students with the same educational opportunities as a teacher who can perceive a student's problems, explain difficult concepts clearly, and motivate students to learn.

3/ A more detailed report of this research will be released next month. It is tentatively titled Teachers and Students: Classroom Interaction in the Schools of the Southwest, and will be available from the Commission on Civil Rights, Mexican American Studies, Washington, D.C. 20425 and from local U.S. Government Printing Office bookstores. Appendix A lists reports from the Commission's Mexican American Education Study.

4/ James Guthrie, G. Kleindorder, H. Levin, and R. Stout, Schools and Inequality. A Report for the Urban Coalition, (1969), Ch. 3. This has subsequently been published by the MIT Press, Cambridge, Mass., 1971.

A comprehensive review of studies focusing on educational opportunities does not include a single study which has assessed educational opportunities arising from the classroom teaching process. 5/ This is partly due to the fact that assessing the teaching processes is a much more difficult and expensive task than assessing school facilities, materials, and qualifications of teachers. However, it is also partly due to the impression that the amount of training and experience of a teacher determines the quality of the teaching process. Unfortunately education research has failed to find strong relations between these or other teacher characteristics, and teacher effectiveness. Consequently, in order to assess fully the quality of educational opportunity afforded different groups of students, it has become imperative to study directly the actual classroom instructional processes.

The objective assessment of the teaching process has been a small but growing area in educational research over the last decade. In this research, teaching is conceptualized as a series of actions and reactions by both the instructor and students. Systematic analysis of these behaviors is frequently known as "interaction analysis."

During the last decade hundreds of classroom interaction studies have been conducted. However, a review of the research indicates that there have been only a very few studies which compared teacher-pupil interactions among students of different ethnic groups. Those studies

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5/ Ibid. Ch. 3 and 4.

which could be located are of little use for broad generalizations because of their very small, non-random samples. 6/

The present study was specifically designed to help remedy the dearth of data on possible ethnic disparities in classroom behaviors. It focuses particularly on possible disparities between Mexican Americans and Anglos. Data were collected on Blacks and students of other ethnic groups as well, but the number of these students included in the sample proved inadequate for statistical analysis.

Sample

Classroom observation was conducted in schools in California, New Mexico and Texas. 7/ Within each State, geographical areas were selected that included rural, urban, and suburban schools with substantial numbers of Mexican American students. The areas selected were:

1. California: Santa Clara County including the city of San Jose
2. Texas: the metropolitan areas of San Antonio and Corpus Christi, the area between these two population centers, and the area 30 miles south of Corpus Christi.
3. New Mexico: the Albuquerque area and the south central part of the State near El Paso, Texas.

6/ Evan Powell and William White, Learning Climate Correlates in Black and White Rural Schools, (Athens: Georgia University R&D Center in Educational Stimulation, 1970). Jere Brophy and Thomas Good, Dyadic Teacher-Child Interaction: Variation Across Social Class and Racial Groups, (Paper presented to 1971 American Educational Research Association Annual Meeting.) Bruce Biddle and Marvin Loflin, Verbal Behavior in Black/Ghetto and White/Suburban Classrooms: An Overview, (Paper presented to 1971 American Educational Research Association Annual Meeting.)

7/ These states contain nearly 60% of the Spanish Surnamed students in the United States and about 90% of the total number in the Southwest.

Schools in these areas were eliminated from the sampling universe if they were special schools (such as those for the handicapped), if they weren't likely to have at least 2 classes at each grade level, or if they had recently been or were about to be investigated by Federal civil rights agencies or subject to court orders for civil rights violations. The sampling universe consisted of 430 schools. Fifty-two schools were randomly sampled.

The classrooms to be observed were sampled from all the 4th, 8th, 10th, and 12th grade classes in which English language arts were being taught. Where English classes were not taught at the desired grade levels, social studies classes were sampled. 8/ Four hundred and ninety-four classes were observed; interaction data were adequate for an analysis from 429 of the visited classrooms: 70 in New Mexico, 171 in California, and 188 in Texas. 9/

8/ Social studies classes constituted 7% of the classrooms for which data were analyzed. None of the analyses showed significant differences between the English and social studies classes.

9/ The major cause of inadequate data was the failure of some classrooms to have at least one Mexican American and at least one Anglo student; this was a prerequisite for the analyses used in the study.

Data Collection

The Commission chose to use the Flanders Interaction Analysis system to code teacher-pupil interactions because it focuses on the forms of teacher behavior which are most directly related to encouraging and involving the student in the classroom learning process. It also is the single most widely used classroom coding system and has proven to be capable of yielding high inter-observer reliability with a moderate amount of training.

The Flanders system codes the predominant verbal classroom behavior once every three seconds according to the most appropriate of 10 categories. The categories are listed and briefly described in Figure 1. The system was modified for this study so that the predominant classroom behavior was coded both in reference to the most appropriate Flanders category and also in reference to the identity of the student involved: 1) an individual Mexican American, 2) an Anglo, 3) a black, 4) a student of another ethnic background, or 5) part or all of the class. This modification allowed the Commission to investigate possible disparities in teacher-pupil interactions within classrooms among students of various ethnic backgrounds.

Figure 1. THE FLANDERS CATEGORIES 10/

1. ACCEPTS FEELING: accepts and clarifies the feeling tone of the students in a nonthreatening manner. Feelings may be positive or negative. Predicting or recalling feelings are included.

2. PRAISES OR ENCOURAGES: praises or encourages student action or behavior. Jokes that release tension, not at the expense of another individual, nodding head or saying, "um hm" or "go on" are included.

3. ACCEPTS OR USES IDEAS OF STUDENT: clarifying, building, or developing ideas suggested by a student. As teacher brings more of his own ideas into play, shift to category five.

4. ASKS QUESTIONS: asking a question about content or procedure with the intent that a student answer.

5. LECTURING: giving facts or opinions about content or procedure; expressing his own ideas, asking rhetorical questions.

6. GIVING DIRECTIONS: directions, commands, or orders to which a student is expected to comply.

7. CRITICIZING OR JUSTIFYING AUTHORITY: statements intended to change student behavior from nonacceptable to acceptable pattern; bawling someone out; stating why the teacher is doing what he is doing; extreme self-reference.

8. STUDENT TALK--RESPONSE: talk by students in response to teacher. Teacher initiates the contact or solicits student statement.

9. STUDENT TALK--INITIATION: talk by students which they initiate. If "calling on" student is only to indicate who may talk next, observer must decide whether student wanted to talk. If he did, use this category.

10. SILENCE OR CONFUSION: pauses, short periods of silence and periods of confusion in which communication cannot be understood by the observer.

10/ Ned A. Flanders, Analyzing Teaching Behavior (Reading, Mass: Addison-Wesley Publishing Company, 1970), pp. 34-50.

The Flanders system was initially designed to tally only the relative frequency of each category of behavior. More recently it has also been used to code the sequence of the interactions. This permits determining how frequently any given behavior was preceded or followed by another behavior. 11/ At the time the field study was being planned, there was no known research which had used the Flanders system with modification for coding the ethnic background of the student involved in each interaction. It was thought that simultaneous coding of the sequence of interaction and the ethnic background of students would be difficult and result in low reliability. Consequently, the data were not coded sequentially. 12/

Five persons were used as observers. They were given four days of intensive training by a researcher experienced with the use of the Flanders coding system. They practiced first with video tapes of classrooms, and then in actual classrooms. The trainer simultaneously coded with the observers in the practice classrooms and subsequently discussed their coding skills with them.

Before starting the data collection, all five observers were checked for their coding reliability with the trainer's own coding of actual classrooms. The reliabilities using the Scott's Pi Coefficient exceeded .85 except in one case which the trainer thought involved a class session

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11/ Ned Flanders, op. cit.; Ch. 3 and 4.

12/ After field work was completed, one staff member experimented with coding sequentially while coding student ethnic background and reported it did not seem particularly difficult. In the future, researchers should consider using such coding with ethnic distinctions.

that was particularly difficult to code. (Reliability for that session was .78.) The observers were twice checked in the same manner during the course of data collection. Their reliabilities were somewhat higher in these checks than in the first one.

Possible differences in the actual coding practices of observers when they were in the field were examined on a post-hoc basis. Each of the twelve measures used as criterion in the analyses of possible disparities in classroom interaction were tested in a one-way analysis of variance using the observers identity as the classifying factor. There was a significant difference between coders on only one behavior, praise. It existed only between the observer who coded the difference as being least favorable for Mexican Americans and the observer who coded the difference as being most favorable for Mexican Americans.

District superintendents and principals were requested to allow Commission staff to visit the school, interview school personnel, and observe classrooms. In most cases the teachers had been informed by the principal that they would be visited by Federal civil rights staff. 13/

13/ The effect of an observer's presence on the behavior of teachers and students is not well documented. It appears that the observer's first couple of visits are most likely to induce obtrusive biases and those biases are likely to usually put both the teacher and pupil on good behavior. This would tend to increase the frequency of certain types of teacher behaviors while reducing others. If this were the only effect of the presence of observers it would not affect the difference in teacher interaction with Mexican American and Anglo students. However, because the teachers were aware that the observers were Federal civil rights staff, it is likely that teachers tended to relate more positively to the Mexican American students than under normal circumstances. If this was so, the Commission's estimates of the differences in teacher interaction with the two groups of students are actually conservative, i.e., the differences which exist under normal circumstances would be greater than those found by the Commission.

No superintendent or principal refused access to a school, and no teacher refused to be observed in her or his classroom.

All observers were assigned to classrooms by a team leader who was not involved in the observing and who tried to assign all observers equal proportions of Spanish Surnamed and Anglo teachers, male [redacted] and female teachers, classrooms of varying track characteristics (untracked, and low, medium, or high tracked), and classrooms at each grade level observed (4, 8, 10, and 12). The only other information known when assigning observers to classes was the time and room number of the class and the name of the teacher. Statistical tests indicate that the efforts to assign observers equal proportions of the above enumerated characteristics were successful. 14 /

Classroom observers spent about 45 minutes in the 4th grade classes and the whole class period in the 8th, 10th, and 12th grade classes. Ten minutes of this time was spent coding the classroom interactions with the modified Flanders system. The rest of the time was spent collecting other data, only part of which was used for this reported study. The observer stopped coding when two-way verbal communication between the teacher and students was not occurring and seemed unlikely to occur soon (such as when the teacher was having the students listen to a record, change seats, etc.); coding was then resumed as soon as two-way communication was resumed.

14/ Chi-square tests at .01 level.

This ten minute segment of a classroom's instructional process is not considered to be representative of the instructional process in any individual class. However, a sample of 10 minute observations from a large number of classrooms is likely to be representative of the interactions of classrooms in the sampled universe.

Classroom observers also collected information on a number of characteristics of teachers and students. 15/ Other Commission staff members collected data on a number of characteristics of the visited schools. There were a total of 22 such characteristics. They are listed in Figure 2.

Data Preparation and Analyses

The raw data from the Flanders interaction coding was modified in five ways to allow for sensitive analysis of possible disparities among students of different ethnic groups. First, the measures were corrected for variation in the total number of tallies for observation of each classroom. Observers were supposed to make one tally every three seconds for a period of ten minutes. For a number of reasons not all observation sessions resulted in exactly 200 tallies. 16/ This was corrected for by multiplying each tally for a given classroom by (200/total number of tallies for the observation of that class).

15/ Some of the information was obtained from a short talk with the teacher after the class period.

16/ These reasons include: 1) the teacher interacted with the students for less than a total of ten minutes during the class period; 2) standard Flanders coding conventions occassionally require coding two categories for one interaction; and 3) the observers' rate of coding sometimes varied slightly from the standard.

Figure 2.

School characteristics

1) Mexican American percentage of school enrollment
2) Anglo percentage of school enrollment
3) Degree of ethnic concentration within school (measured by the variance of the Anglo percent composition of the classrooms) 17/
4) Average socio-economic status (SES) of Mexican Americans in the school (principal's estimate)
5) Average SES of Anglos in the school (principal's estimate)
6) Difference in Mexican American and Anglo average SES
7) Average SES of the school (weighted average of Mexican American and Anglo SES)
8) State in which school is located

Classroom characteristics

9) Grade level of class
10) Track level of class (as reported by teacher) 18/
11) Subject matter of course
12) Criterion used to seat students (as reported by the teacher) 19/
13) Seating priority index of Mexican Americans in the classroom (based on observed seating positions) 20/
14) Seating priority index of Anglos in the classroom (based on observed seating positions) 20/
15) Mexican American percentage of enrollment in the class
16) Anglo percentage of enrollment in the class
17) Total number of students in the class

Teacher characteristics

18) Extent of teacher's formal education
19) Teacher attendance at any inservice training sessions related to teaching Mexican Americans (as reported by the teacher)
20) Teacher's ethnicity
21) Teacher's age
22) Teacher's sex

17/ This indicates the extent to which Anglo and minority students in a given school are separated into different classrooms.

18/ Tracking is the practice of assigning students to classrooms so as to make class enrollments more homogeneous in respect to some purported measure of the students' ability or performance.

19/ Seating criteria were divided into five categories: student choice, student choice with teacher modification (teacher modification was usually to correct discipline problems), alphabetical order, homogeneous "ability" grouping, and other methods of teacher choice.

20/ The seating priority index indicates how close, on the average, were students of a given ethnic group to the teacher's primary location for the period of coded interaction.

The second modification was that category ten of the Flanders system was dropped from analysis (because it was always coded in reference to "part or all of the class," not in reference to student ethnicity), and three compound categories of behavior were constructed from the other Flanders categories (listed as categories 10-12 in Figure 3).

The third modication was that Mexican American interaction measures and the Anglo interaction measures for each class were converted to average per pupil measures by dividing the total number of tallies for each interaction behavior for each ethnic group by the number of students of that ethnicity in that class. This was necessary because different classrooms had different numbers of Mexican Americans and Anglos.

The fourth modification was that Mexican American and Anglo per pupil measures were corrected for class size. The total number of tallies should be unaffected by class size, but per pupil measures will be. This is because teachers have a relatively fixed amount of time to interact with individual students, so the more students there are in the class, the less time the teacher will have to interact with each one. The purpose of controlling for class size is not to deny its importance, but rather to control its pervasive impact on the per pupil measures. The correction for class size was made by multiplying each per pupil interaction measure by (class size/25).

The final modification of the data was to construct difference scores for each classroom from each of the 12 per pupil measures for Mexican Americans and the corresponding per pupil measures for Anglos.

The major questions for analysis were whether or not Mexican Americans and Anglo students were equally often involved in each category of interaction. This was tested using the difference scores for twelve matched-sample t tests, one for each category of interaction. 21 / It was also of interest to know if the significant disparities in teacher-pupil interaction involving Anglo and Chicano pupils varied across levels or categories of the 22 teacher, classroom, and school characteristics. This was examined by one-way analysis of variance tests. All hypotheses were tested at the .01 level of significance.

Results

Six of the twelve measures of interaction showed substantial and statistically significant differences between Chicano and Anglo students. These differences were for teacher praise or encouragement of students, teacher acceptance or use of students' ideas, teacher questioning, the teachers' giving of positive feedback, all non-criticizing teacher talk, and all student speaking. The results are shown in Figure 3.

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21 / Some statistics texts fail to indicate that the matched-sample t test is only more powerful than the two-sample t test when there is sufficient covariance between the measures for which the difference scores are calculated. Substantial covariance seemed likely for these data because all students in a classroom do have the same teacher, but it was not empirically known prior to the data analysis. Therefore, all 12 of the matched-sample t tests were replicated using the two sample t tests for independent samples; the results indicated that the matched-sample t test was in fact the more powerful one for these data.

Figure 3.

AVERAGE FREQUENCY OF CODED BEHAVIORS ASSOCIATED WITH AVERAGE INDIVIDUAL MEXICAN AMERICAN AND AVERAGE INDIVIDUAL ANGLO STUDENTS AND THE DIFFERENCE BETWEEN THEM [22]/

Teacher and Student Behaviors	Average Individual Mexican American Student	Average Individual Anglo Student	Disparities	Percent Difference	t Value
1) Teacher acceptance of students' feelings	.004	.008	+.004	100.0%	1.73
2) Teacher praising or encouraging students	.137	.186	+.049	35.8	2.95 *
3) Teacher acceptance or use of students' ideas	.156	.219	+.063	40.4	3.32 *
4) Teacher questioning	.525	.636	+.111	21.1	2.41 *
5) Teacher lecturing	.584	.710	+.126	21.6	1.87
6) Teacher giving of directions	.146	.141	-.005	2.7	.20
7) Teacher criticizing or justifying authority	.055	.052	-.003	7.3	.37
8) Student response speaking	.771	.948	+.177	23.0	1.99
9) Student initiated speaking	.796	1.034	+.138	29.9	1.66
10) Teacher giving of positive feedback	.296	.413	+.117	39.5	3.73 *
11) All non-criticizing teacher talk	1.551	1.901	+.350	22.6	2.99 *
12) All student speaking	1.567	1.982	+.415	26.5	2.45 *

* t is statistically significant at .01 level for a one-tail test with 428 degrees of freedom when equal to or greater than 2.326. The one tail test was used because prior to seeing the data the authors had hypothesized that all measures except teacher giving of directions and teacher criticizing would be greater for Anglos than for Mexican Americans.

22/ The values in the first two columns represent the number of times during a ten minute period that the average individual student of the indicated ethnicity was coded as involved in the specified interaction; coding was done at a fixed rate of 20 times per minute.

Only three of the significant disparities in teacher-pupil interactions involving Chicano and Anglo students varied significantly across any of the 22 investigated characteristics of schools, classrooms, and teachers. The disparities in the amount of praise or encouragement given to Chicano and Anglo students varied significantly across categories of student seating assignment criteria and teacher ethnicity. The disparities in the amount of acceptance or use of students' ideas varied significantly across levels of ethnic concentration within the school. And the disparities in the amount of all positive feedback given to Chicano and Anglo students varied between categories of student seating assignment criteria and levels of ethnic concentration within the school. The mean values for the significant differences are shown in Figures 4-8. 23/

23/ The values in the figures represent the number of times during a ten minute period that the average individual student of the indicated ethnicity was coded as involved in the specified interaction.

Figure 4.

Average Amount of Praise or Encouragement Given Per Pupil to Individual Mexican American and Anglo students by Teachers Using the Specified Criterion for Assignments of Seats

CRITERION FOR ASSIGNMENT OF SEATING:	TEACHER CHOICE	ALPHABETICAL	HOMOGENEOUS BY ABILITY	STUDENT CHOICE	STUDENT CHOICE WITH TEACHER MODIFICATION
Chicanos	.179	.161	.121	.125	.112
Anglos	.198	.183	.559	.179	.119
Disparity	+.019	+.022	+.438	+.054	+.007
N	72	53	13	244	47

Figure 5.

Average Amount of Praise or Encouragement Given Per Pupil to Individual Mexican American and Anglo Students by Mexican American and Anglo Teachers

TEACHER ETHNICITY:	MEXICAN AMERICANS	ANGLOS
Chicanos	.136	.138
Anglos	.326	.172
Disparity	+.190	+.034
N	36	386

Figure 6.

Average Amount of Acceptance and Use of Student Ideas Given Per Pupil to Individual Mexican American and Anglo Students by Teachers in Schools with Various Degrees of Ethnic Concentration *

DEGREE OF ETHNIC CONCENTRATION WITHIN THE SCHOOL:	LOW	MEDIUM	HIGH
Chicanos	.140	.177	.145
Anglos	.327	.189	.188
Disparity	+.187	+.012	+.043
N	96	163	174

* The degree of ethnic concentration within the school represents the extent to which there is variation in the ethnic composition of classrooms within a school. In low ethnic concentration schools, Anglo students appear to be distributed evenly among the classrooms. In high ethnic concentration schools, Anglo and non-Anglos are assigned to different classes.

Figure 7.

Average Amount of Positive Feedback Given Per Pupil to Individual Mexican American and Anglo Students by Teachers Using the Specified Criterion for Assignment of Seats

CRITERION FOR ASSIGNMENT OF SEATING:	TEACHER CHOICE	ALPHABETICAL	HOMOGENEOUS BY ABILITY	STUDENT CHOICE	STUDENT CHOICE WITH TEACHER MODIFICATION
Chicanos	.318	.335	.302	.284	.284
Anglos	.422	.395	1.062	.391	.380
Disparity	+.104	+.060	+.760	+.107	+.096
N	72	53	13	244	47

Figure 8.

Average Amount of Positive Feedback Given Per Pupil to Individual Mexican American and Anglo Students by Teachers in Schools of Different Degrees of Ethnic Concentration Within the Schools

DEGREE OF ETHNIC CONCENTRATION WITHIN THE SCHOOL:	LOW	MEDIUM	HIGH
Chicanos	.282	.350	.255
Anglos	.569	.362	.374
Disparity	+.287	+.012	+.019
N	96	163	174

Discussion and Conclusions

A decade of research has investigated the relationships between teacher behaviors and gains in student achievement. The behaviors which have been found to be most strongly related to student gains in achievement are some forms of praise, the acceptance and use of student ideas, and questioning. 24/

Unfortunately, this study found large and significant disparities in all three of these behaviors. Teachers praise or encourage Anglos 35% more than they do Chicanos, accept or use Anglos ideas 40% more than they do those of Chicanos, and direct 21% more questioning to Anglos than to Chicanos.

24/ Barak, Rosenshine, "Teaching Behavior Related to Pupil Achievement, Review of Research," Research into Classroom Processes: Recent Developments and Next Steps, ed. Ian Westbury and Arno Bellack (New York: Teachers College Press, 1971), pp. 66-98. This is probably the most comprehensive review of studies about the effects of teacher behaviors on gains in students attitudes and achievement. Rosenshine reviews a series of studies and draws conclusions from the relative frequency with which different findings are replicated. He qualifies his conclusions because about half the studies do not show significant positive effects for the behaviors mentioned in the above text, although very few show significant negative effects. His qualifications are probably more restrictive than justified by the pattern of results. This is because for inferences to be validly based directly on the frequency of a given statistically significant finding across replicated studies, the studies must have approximately equivalent probabilities of finding significant results when they actually exist (statistical power). Rosenshine does not indicate that this is so, and it is quite likely it was not the case. Some of the studies with nonsignificant results probably had such low statistical power that they had little chance of indicating significant differences except where there were huge differences in the sample.

The average school achievement of Mexican Americans is substantially below that of Anglos in the Southwest. The proportion of Chicano students reading below grade level is approximately twice that of Anglos. Furthermore, forty percent of Chicanos and only fifteen percent of Anglos fail to complete high school. 25/

This study cannot prove whether the discovered disparities in teacher behaviors cause the disparities in student achievement. However, given the findings of previous research on the relationships between some teacher behaviors and gains in student achievement, it does appear likely that the behaviors of teachers in the Southwest are at least contributing to the poor academic achievement of many Chicano students.

Furthermore, there is good reason to believe that the disparities in teacher behavior which were found in this study have more effect on student achievement than would be suggested by the previous research. Most of the previous research was based on interaction data coded for the whole class with no distinction among the students involved in the interaction. That interaction data was then studied for its relationships to the classrooms' average gains in student achievement.

This study investigated disparities in teacher behaviors within classrooms rather than between classrooms. The Chicanos in the Southwest not only receive less of the teaching behaviors which most facilitate learning,

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25/ U.S. Commission on Civil Rights, The Excluded Student, Report II of the Mexican American Education Study (Washington, D.C.: U.S. Government Printing Office, 1971).

but many probably are confronted daily with the awareness that their teachers are treating them (as individuals and as an ethnic group) less favorably than their Anglo classmates. This awareness can be expected to have serious effects on the Chicano students' motivation, attitudes, and eventually their achievement. 26/

It will be argued by some that though these disparities may not be particularly beneficial for Mexican American students, they are the inevitable result of the Mexican American students' own behavior. Chicano pupils, as a group, do enter school differing from Anglo students in the facility with which they speak English, in their economic and cultural background, in their values and interests, and in their previous life experiences. However, it is the schools' responsibility to provide educational programs appropriate to the background and needs of all students. Only a small percentage of schools in the Southwest have implemented language programs to help Chicanos improve their English language skills. The textbooks and source materials rarely make use of the skills and experiences which are familiar to children of Spanish speaking backgrounds. Similarly, teachers are seldom trained to incorporate the interests and experience of Chicano children into classroom discussions. 27/

26/ There may be a similar effect for the whole class if it perceives that it is being treated less favorably than are other classes. But the effect is likely to be much weaker because a class can not directly observe differences in how it is being treated in comparison to other classes.

27/ See U.S. Commission on Civil Rights, The Excluded Student, Report III of the Mexican American Education Study (Washington, D.C.: U.S. Government Printing Office, 1972).

Because schools have generally not adapted their programs to the background of Chicano students, the Chicanos are probably initially somewhat more reluctant than Anglos to speak in the classroom. This failure by the schools also inevitably makes the course material more difficult for Chicano students than it is for Anglo students. As a consequence of these factors, Chicano students may provide the teacher with fewer familiar opportunities to praise them or to use their ideas.

Yet there is good evidence to show that the disparities in teacher's behaviors can not be fully explained by the inadequacies in the school program or the resulting student behavior. First, the data from this study shows that teachers direct substantially less questioning to Chicano students than to Anglo students. This gives the Chicanos less opportunity to speak in class. It may also be interpreted by the Chicano students to mean that the teacher does not want them to speak much, which would further add to their reluctance to speak in class. It is possible that some teachers feel that they are being sympathetic and understanding by not directing questions to students who appear reticent to speak in class. However, this practice is less likely to facilitate the students' growth than efforts by the teacher to encourage the students to speak in class by asking them interesting questions which they are capable of adequately answering and by following their contributions with positive feedback.

Second, teachers accepted or used Anglo students' ideas 40% more than Chicano students' ideas despite the fact that Anglos spoke only 20% more than Chicanos. No data were collected on the quality of contributions made

when students spoke. It is possible that teachers may have judged Chicano students' contributions to be of a lower quality, on the average, than those of Anglos. Nevertheless, the Flanders category of acceptance and use of ideas includes simple acknowledgements of a student's contributions such as "Well, that's an interesting point of view" or "I see what you mean" as well as paraphrasing, restating, or summarizing the student's statement. These teacher responses do not need to be dependent on the quality of the student's contribution.

Third, although Chicanos might make fewer "good" or "correct" contributions in class, this does not necessitate or even justify the 35% disparity between Chicanos and Anglos in the amount of praise and encouragement they get from the teacher. If a child simply cannot answer questions or do work on some subject matter, it is the teacher's responsibility to provide him with work and questions with which he can be moderately successful, and then provide him with positive feedback for that success. Also, praise and encouragement were coded together as one category. Those children who are making the fewest praiseworthy contributions are the very ones who need the most encouragement. Furthermore, two other studies suggest that some teachers actually give a lower proportion of praise for good responses to those students wh they perceive as being the lowest achievers in the class than they do for the good responses of students who they perceive as being the highest achievers in the class. 28/

28/ Jere Brophy and Thomas Good, Teachers' Communication of Differential Expectations for Children's Classroom Performance: Some Behavioral Data, (Austin, Texas: Research and Development Center for Teacher Education, University of Texas at Austin, 1969); Thomas Good, Jere Brophy, and Sonia Mendosa, Who Talks in the Classroom, (Austin, Texas: Research and Development Center for Teacher Education, University of Texas at Austin, 1970).

The disparities in teacher behaviors toward Chicano and Anglo students documented in this study suggest that substantial revisions or additions need to be made to the programs operating to train and upgrade teachers in the Southwest. The analysis of the relationship of the disparities to various school, classroom, and teacher characteristics will be of limited aid in determining what changes should be made in those programs. With only a few exceptions the disparities were found to be equally large across levels or categories of all 22 investigated characteristics.

Perhaps the most useful changes in the training programs would be 1) to provide information about the disparities in the teaching behavior which are presently directed to Chicano and Anglo students, and about the causes and effects of these disparities; 2) to provide specific instruction on ways to counteract the forces which tend to cause the harmful disparities; 3) to provide simulation or micro-teaching experiences designed to confront the trainees with the forces which tend to cause the disparities and give them guidance in developing teaching styles and strategies which will minimize the harmful disparities; and 4) to provide teachers with feedback about possible disparities in their teaching behavior during their [redacted] internship or on their regular jobs.

Publications from the U.S. Commission on Civil Right's Mexican American Education Study

ED052849 Report I: Ethnic Isolation of Mexican Americans in the Public Schools of the Southwest - The main focus of this report is the extent to which Mexican American students are isolated from Anglo students by school. In addition it also documents the underrepresentation of Chicanos as teachers, principals, other administrative personnel, and school board members.

ED056821 Report II: The Unfinished Education: Outcomes for Minorities in the Five Southwestern States - This report analyzes the performance of schools in the Southwest in terms of educational outcomes for students of various ethnic backgrounds. The measures of outcomes were reading achievement, school holding power, grade repetition, overageness for grade assignment, and participation in extracurricular activities.

ED062069 Report III: The Excluded Student: Educational Practices Affecting Mexican Americans in the Southwest - This report examines the way the educational system looks at the unique linguistic and cultural background of the Mexican American student. It also examines programs used by some of the schools in attempting to adjust to these differences and the school's relationship to the Mexican American community.

Report IV: Mexican American Education in Texas: A Function of Wealth
This report focuses on school finance in Texas as it affects the educational opportunity of Chicano students. As a corollary to Report IV, the Texas State Committee to the U.S. Commission on Civil Rights issued a report in which it offered recommendations for school finance reform in Texas.

Inequality in School Financing: The Role of Law - This report (unnumbered) reviews laws and court decisions bearing upon school finance and discusses considerations in important pending decisions.

Report V: Teachers and Students: Classroom Interaction in the Schools of the Southwest (title is tentative) - This report, to be released in March 1973, focuses on disparities in the way teachers interact with Mexican American and Anglo pupils, on possible reasons for these disparities, and on their likely affects.

A final report in this series will review how educational practices in the Southwest are adversely affecting the educational opportunities of Chicanos and make recommendations for improvements in these practices.